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ABSTRACT

As background for the 1972 Education Amendments, the National Center for Higher Education Management Systems (NCHEMS) was asked to look at whether a method of federal institutional aid could be developed that would still preserve the incentives of the states to fund higher education. It was concluded that such a method of financing could be developed. The current proposal is reported in five main sections covering: (1) details of the current proposal; (2) the policy platform that underlies the current proposal; (3) attempts to determine the contribution that proposed methods of financing would make to the national objectives for higher education that were proposed by the National Commission on the Financing of Higher Education; (4) ancillary details of the current proposal; (5) some criticism and concerns that have been raised about the proposals. Appendixes follow. (Author/KE)

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# A PROPOSAL TO FUND STATES
# ON THE BASIS OF THEIR SUPPORT OF HIGHER EDUCATION

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Wayne Kirschling



Note: This paper was the basis for a presentation which the authors made to an ACE sponsored workshop on their proposal which was held on December 12, 1974.

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## BACKGROUND

As background for the 1972 Education Amendments, the National Center for Higher Education Management Systems (NCHEMS) was asked to look at whether a method of federal institutional aid could be developed that would still preserve the incentives of the states to fund higher education. It was concluded that such a method of financing could be developed. These findings were published in a research report authored by Wayne Kirschling and Rudy Postweiler which was entitled, General Institutional Assistance: A Scheme That Depends on the Educational Efforts of the States and the Attendance Choice of Students. A synopsis of this technical report, intended for lay readers, was also published at the same time.

The original proposal has been recently revised by the authors. These revisions were undertaken to make this method of financing more in tune with the issues and concerns of today. This revised version formed the basis for the senior author's July 2 testimony before Congressman James O'Hara's Select Subcommittee on Education. This paper reports on the current proposal and elaborates on some considerations which were ignored, or only briefly alluded to, in earlier papers and testimony.

## PREVIEW

This paper has five main sections. The first section presents the basic details of the current proposal. The second section describes the policy platform that underlies the current proposal. This policy platform explicates many of the values and judgments which lie behind the proposed method of financing. The third section describes the authors' attempts to determine the contribution that their proposed method of financing would make to the national objectives for higher education which were proposed by the National Commission on the Financing of Higher Education. The fourth section is directed to several of the ancillary details of the current proposal. These are details which serve to "fine tune" the proposal rather than to change its basic thrust. The final section reports on some of the criticisms and concerns which have been raised to date about the authors' proposal. These criticisms are included because they help to put the current proposal into a much clearer perspective.

## THE PROPOSED METHOD OF FINANCING

It is time to introduce a new dimension into the student aid versus institutional aid debate. It is time to suggest that perhaps the focal point of federal financing should be states and not students or institutions.

It is proposed, then, that the federal government should annually give to each state a lump sum of money. This lump sum of money would be determined by two factors — one, an index of the effort that each state was making in supporting higher education, and two, the total number of students who were enrolled in the public and private institutions of each state.

The index of state effort in supporting higher education should be made up of two components — one dealing with enrollments and one dealing with expenditures. The enrollment component should be determined by dividing the number of students enrolled in public and private institutions within the state by the number of citizens in the state within the target population for higher education. For purposes of this proposal, no distinction is made between in-state and out-of-state students. Students are credited to the state where they enroll. The residency status of students or the geographical domicile of their parents is not considered. It is important to note that enrollments are measured on a relative and not an absolute basis. Thus, a small state has no automatic advantage or disadvantage as compared to a large state. In shorthand then, this component can be written as:

$$\frac{\text{Students}}{\text{Target Population}}$$

The student and target population terms in the above expression, like all terms in this paper, will be used in a generic rather than specific way. While there are significant considerations which surround the specific definitions of these terms (e.g., headcount students versus FTE students), in general these considerations will not be addressed within this paper. However, examples of specific definitions of terms will be given when it is felt these examples are necessary to understand the generic basis of the term. For example, the target population in the above expression could be defined as a headcount of all 17 to 25 year olds who reside within a state.

The proposed expenditure component of the overall composite index of state effort can be written in shorthand notation as:

$$\frac{\text{State \& Local Expenditures} - \text{Total Tuition}}{\text{Total Personal Income}}$$

This component, like the enrollment component, works in relative rather than absolute terms. Because state and local expenditures are divided by total personal income, a poor state and a rich state are put on equal footing for purposes of measuring their efforts in supporting higher education. As is suggested by the above relationship, tuition also has an important role to play in the proposed index of state effort. Since it enters the relationship with a negative sign, states are encouraged to stabilize or lower their tuitions if they want to achieve a high index of educational effort.

The overall or composite index of state effort is calculated as:

$$\text{State Effort} = \frac{\text{Students}}{\text{Target Population}} \times \frac{\text{State \& Local Expenditures} - \text{Total Tuition}}{\text{Total Personal Income}}$$

So that each state's index of effort can be used in determining that state's total award, each state's composite index of effort is converted into a per student award. The state making the largest effort would have its index of effort converted into the full or maximum per student award. For illustration purposes, this full per student award is set at $100 per student. Every other state would have their index of effort converted into a lesser per student award. The actual size of every other state's per student award would depend upon how closely their index of effort approximated the index of effort of the best state. If a particular state's index of effort was 30 percent of the index of effort for the highest state, then that state would be eligible to receive 30 percent of the full per student award — or $30 per student for the current example.

The total award to a state would then be determined by multiplying its per student award times the number of students who were enrolled in higher education in that state. Hence, a large state might receive more total dollars than a smaller state, not because its per student award was higher, but because it had enrolled more students. But, it is also possible that a smaller state might receive more dollars than a larger state if the smaller state was making a more substantial educational effort than the larger state and if it had a sufficient number of students enrolled in institutions within the state.

A brief summary of the calculations involved in the proposed method of financing is given by the following table.

| States | Index of Effort | Comparative Effort | Per Student Award | Number of Students | Total Award |
|---|---|---|---|---|---|
| 1 | Highest | 1.00 | $100 | 200,000 | $20,000,000 |
| 2 | . | . | . | . | . |
| 3 | . | . | . | . | . |
| . | . | . | . | . | . |
| . | . | . | . | . | . |
| 49 | . | . | . | . | . |
| 50 | Lowest | .10 | 10 | 100,000 | 1,000,000 |

For the interested reader, Appendix A contains several "real data" examples of the above calculations.

Each state would be given the widest possible latitude in determining how they spent their total federal award. For example, a state might use their award to do one or more of the following:

- Expand a student aid program that they are currently operating
- Develop and fund a new form of student aid
- More fully fund an existing student aid program
- Contract with private institutions for programmatic services
- Provide general assistance grants to both public and private institutions
- Use these federal revenues to offset revenue losses from tuition reductions.

This list, of course, is not exhaustive. The intent here is that the states would have substantial latitude, much as they now have in federal revenue sharing, to spend these federal dollars in ways which they feel are most appropriate given the specific and often unique circumstances of each state. The only restriction would be that these dollars would have to be spent on programs to support higher education. Of course a state could always choose to substitute some or all of these federal dollars for its own dollars. However, this action would be reflected in that state's effort index the next year, and they would find themselves with fewer federal dollars to spend. Hence, there is a built-in incentive in this method of financing for maintenance of state-level efforts.

## THE POLICY PLATFORM

All financing proposals are based upon and support a set of values. This section lays out some of the crucial values and judgments which lie behind the method of financing which was proposed in the previous section.

Federal/state relationships should be characterized more by incentives and free choice than by legislative mandates and legal requirements. While it would be desirable if the exact response of each and every state to the proposed method of financing could be predicted prior to its enactment, such a prediction is a practical impossibility. On the other hand, the incentives that the proposal sets up for states to enroll more students, to lower tuitions, and to financial support higher education are clear and it is felt that most, if not all, states will respond in an appropriate manner to these incentives.

States have the primary responsibility for providing higher education services. Hence, federal programs should support and reinforce state efforts in a way that will promote federal objectives. Most existing proposals require that many states change their financing mechanisms for higher education if they were to benefit optimally from the proposed federal initiatives. They have the undesirable characteristic of providing incentives to the respective states to move toward a single, common approach to financing higher education. The proposal put forth in this paper is designed to create just the opposite effect. Under this proposal, each state is encouraged to develop funding strategies and programs that will work best in that state.

Federal initiatives should encourage states to maintain, if not increase, their support for postsecondary education. Existing proposals often provide incentives to states to reduce their financial support of postsecondary education — to substitute federal dollars for state dollars. While it is true that many states have continued to generally support higher education, even after new federal programs have been enacted, there are many informed individuals who feel strongly that this trend may not continue. These individuals point out the many significant and often new demands which are being made upon state budgets. They cite studies which show that higher education is slipping in importance in the eyes of many individuals at the state level. Now may be a propitious moment in history for the federal government to assert the principle that it will help states to shoulder the responsibility of funding higher education, but only if states are willing to continue their efforts. Beyond this, it is well known that there are marked differences in the efforts which the different states make in support of higher education. It is time that the states making these comparatively poor efforts be given a strong incentive to substantially improve on their efforts. They should know that if they make additional efforts, that the federal government will do likewise. At the same time, those states that have been making a strong effort should continue to receive significant federal dollars so that they can further strengthen their strong efforts. The proposed method of financing, because it distributes funds on the basis of state efforts, is offered as a way of potentially accomplishing this combination of incentives and support.

As has already been pointed out, there is a built-in incentive within the proposal for states to stabilize or even lower tuitions. Because of a minus sign on total tuitions, states in which tuitions were reduced would be judged as making a larger effort. Individual states may do this in different ways depending upon the circumstances that exist. For example, a state with considerable private education may decide that a new student aid program in which students receive enough aid to allow them to attend private institutions is the best way to go. This program might be based on the premise that such a program would allow private institutions to hold the mark on tuitions because this program would result in these institutions being fully enrolled. Another state with considerable public education might decide to lower public tuitions and cover the losses in institutional revenue with the federal funds. In effect, this proposal asks the federal government to take a stance on tuitions — a stance that tuition levels in both public and private institutions should be kept as low as circumstances will permit.

Federal programs should be designed to provide incentives to states to develop programs that will increase student access. Given what is known today, other than lower tuitions, there is no one best way on a national basis to bring about more enrollments. Rather, each state will have to seek out the best combination of methods. Depending on the state, some or all of the following approaches may be used:

- Giving more student aid to low income students
- Making higher education opportunities more geographically accessible
- Initiating new programs in which there is substantial interest among those who are currently not enrolled

— Giving income supplements to students from the lowest income families
— Expanding the junior college system

It would be folly at best to think that any one of these approaches should be encouraged on a national basis. But what may be folly on a national basis may be just what the doctor ordered on a state or local basis. The judgment is made that we as a nation are apt to get more total access by creating national incentives for access and then allowing each state to design access promoting programs which are best suited to that state than by any other approach.

In light of changes in the age of majority and the lowering of residency requirements, federal programs should encourage each state to take responsibility for the education of all persons within the state regardless of where those persons attended high school.

The proposed method of financing, because it gives credit to the state in which a student enrolls, encourages states, at least for purposes of obtaining federal funds, to accept out-of-state students. This incentive to accept out-of-state students has the added advantage of encouraging students to attend that institution which they think will best meet their needs, whether or not it is located in the state in which they currently reside.

There is implicit in the proposed method of financing a judgment that overall access is more important than targetted access. This is best illustrated with the help of a brief example. Even if there were to be achieved on a national basis an equal distribution of students by income origins, but overall higher education participation dropped from say 50 to 30 percent; most individuals probably would feel that the nation was worse off. Hence, the proposed method of financing is designed to focus national attention on the importance of keeping overall participation rates high. Targetted participation should be addressed with very narrow, but certainly not small, targetted federal aid programs. Many individuals feel that the current aid programs do not go far enough in aiding students with low income backgrounds. Raising the participation rates of these individuals has been more difficult than most suspected. Hence, there is a growing sentiment that programs are going to have to be designed to meet more than just the tuition costs of these students. Part of the problem is that funds in current student aid programs gradually have been directed towards higher and higher income students. It is unlikely that these trends will be halted until federal programs which meet the needs of the majority are put into place so that targetted programs can become just that. The proposed method of financing most certainly is not a targetted student aid program. It may, however, be one good way to meet the needs of the majority. If this proposed method of financing were enacted on a reasonably large scale, it might then allow truly targetted student aid programs to emerge.

The proposed method of financing attempts to treat states equitably. Unlike matching proposals, it does not give a distinct advantage to wealthy states. Unlike some federal programs which distribute dollars just on the basis of population, it recognizes that personal income must also be taken into account. Equally populous states, because of differing financial circumstances, are not equally able to support higher education. Hence, the proposed method depends on an index of relative financial efforts. Because the proposed index of effort is based on relative rather than absolute enrollment and expenditure measures, small and poor states in general should be able to compete fairly with large and rich states. Of course, no comparison of states is ever going to be able to take into account all the important distinctions; but the proposed method of financing does incorporate some of the most important factors, and hence, is a step in the right direction.

There should be an automatic way in which federal support of higher education can take into account inflation. The proposed method of financing has this capability. As states spend more to try and keep pace with inflation, these efforts will be reflected in their effort index, and they will receive additional federal dollars. State level spending to keep pace with inflation is just as much an effort on their part to support higher education as are lower tuitions or larger enrollments, and hence, it is automatically and directly included in the expenditures term in the proposed index of effort.

There is no national solution to private education that can be applied in all states. The private sector is dominant in some states and nonexistent in others. Still the proposed method of financing does address, albeit in a somewhat indirect way, the question of support for private education. It does this by giving states a rather strong set of incentives to recognize the contributions that private institutions are making to higher education within their states. If the proposed method of financing were to be enacted, private institutions then would be able to make the following argument in each state. First, their enrollments, whether derived from in-state or out-of-state students, are helping the state get additional federal dollars. Second, if private institutions are under-enrolled or if they are forced to raise their tuitions, then the state will lose federal dollars. Third, state expenditures that directly or indirectly assist private institutions are weighted equally with state expenditures that benefit public institutions. These arguments, along with a whole set of other factors unrelated to the proposal, should substantially strengthen the private institutions' abilities to obtain public support at the state level.

While it may not be obvious at first glance, the proposed method of financing does include incentives for the states to maintain a reasonable balance between expenditures and enrollments. This incentive exists because the index of state effort is determined by multiplying relative expenditures times relative enrollments. In effect, each of these kinds of effort becomes a multiplier for the other kind of effort. A state that is making a large enrollment effort will not have a large composite index of effort unless its expenditure effort is also considerable. Conversely, a state that is making a large expenditure effort will not have a large composite index of effort unless its enrollment effort is also considerable. In this way then, the proposal encourages each state to explicitly consider the proper balance between the various components of effort. In a later section, a modification to the method of financing will be introduced which would allow the federal government to weight various components of effort differently. These weights are important to the current discussion because they would allow the federal government to influence the balance that is struck in each state between its enrollment and expenditure efforts.

The federal bureaucracy which would be required to operate this program would be exceptionally small. All of the small amounts of data required to determine state effort are readily available. The effort required to distribute the funds to the states would be small because so few strings would be attached. Unlike some other federal programs, the operational aspects of running this program would be neither cumbersome or burdensome.

The policy platform for the proposed method of financing, then, consists of the following values and judgments:

1. Federal/State relationships should be built on incentives and free choice.

2. States have the primary responsibility for providing higher education services, and hence, federal programs should support and reinforce state efforts.

3. Federal programs should encourage states to continue, and in many cases increase, their dollar support of higher education.

4. Federal programs should encourage states to stabilize or, if possible, to lower tuition levels.

5. Federal programs should encourage states to develop programs that will increase student access.

6. States, whether rich or poor, whether large or small, should have an equitable chance to compete for federal dollars.

7. Federal support to states should automatically increase when states are forced to spend more to keep pace with inflation.

8. Federal programs should encourage states to recognize and support private institutions.

9. States should be encouraged to maintain a proper balance between expenditures and enrollments, between quality and quantity.

10. The federal bureaucracy should be kept as small as possible.

## CONTRIBUTION TO NATIONAL OBJECTIVES

This section addresses the contributions that the proposed method of financing could make to the objectives that were developed by the National Commission on the Financing of Higher Education. The National Commission suggested eight objectives: access, choice, student opportunity, educational diversity, institutional excellence, institutional independence, institutional accountability, and adequate financing.

Access — The Commission's definition was:

> Each individual should be able to enroll in some form of post-secondary education appropriate to that person's needs, capability, and motivation.

Overall enrollments are an important component of the proposed index of state effort, and hence, there is created a direct state level incentive for promoting access. The proposed index also encourages the stabilization or lowering of tuitions, and hence, there is created an additional indirect incentive for access. Finally, the proposed index, by including state and local expenditures, encourages states to adequately fund higher education, and adequate funding has a significant impact on access.

Choice - The Commission's definition was:

> Each individual should have a reasonable choice among those institutions of postsecondary education that have accepted him or her for admission.

The proposal contributes to this objective in two ways. First, under the proposal, states are given direct dollar incentives to accept out-of-state students. These incentives are important because if more states were willing to lower their barriers to the interstate mobility of students, student choice would be expanded substantially. Second, the proposal does create some additional incentives for those states which have a significant private sector to support that sector. To the extent that private institutions get additional support in appropriate ways from the states, student choice will be expanded.

Student Opportunity — The Commission's definition was:

> Postsecondary education should make available academic assistance and counseling that will enable each individual, according to his or her needs, capability, and motivation, to achieve his or her educational objectives.

It is probably fair to say that most students have as one of their educational objectives the obtaining of a certificate, degree or diploma. This means that students should be encouraged to remain in school until their educational objectives are realized. The proposed method of financing, then, contributes to this objective by counting all students, not just first-time enrollees; a third-year student is considered to be just as important as a first-year student. It is also appropriate to point out that under the proposed method of financing the states would ~~be able~~, at their discretion, to use their federal funds to develop specialized programs in the area of academic assistance and counseling.

Educational Diversity — This objective was defined in the following terms:

> Postsecondary education should offer programs of formal instruction and other opportunities and engage in research and public service of sufficient diversity to be responsive to the changing needs of individuals and society.

By encouraging private education; by allowing states to develop those programs which make the most sense for their state, and by not developing rigid, detailed national programs, the proposed method of financing has the potential to make a modest contribution to a national objective of educational diversity.

Institutional Excellence — The Commission's definition was:

> Postsecondary education should strive for excellence in all instruction and other learning opportunities, and in research and public service.

Excellence requires adequate funds. While adequate funding will not insure excellence, it almost invariably is true that excellence cannot be had without adequate, and often generous, funding. Hence, the proposed index of effort does place a substantial weight on state and local expenditures. Furthermore, different institutions will seek different kinds of excellence — some in instruction, some in research, and some in the opportunities they offer to deprived students. Hence, the proposed method of financing does not just count funding of instruction and is not restricted to certain types of institutions. The decision as to which areas of excellence should be pursued is one that is left in this approach to financing at the state level where institutions and state agencies can deal with these matters in an appropriate way.

Institutional Independence — The Commission's objective was:

> Institutions of postsecondary education should have sufficient freedom and flexibility to maintain institutional and professional integrity and to meet creatively and responsively their educational goals.

Institutional independence has several dimensions. In part, independence is a function of not depending too much on one source of funding. In general, under the proposed method of financing, both the federal government and state and local governments would be encouraged to fund higher education. However, this method of financing could lead to federal funds in this program drying up for a particular state if that state decided to cut back on its educational efforts. On the other hand, an individual state would know that the federal government would not cut back on its support via this program simply because that state had decided to increase its own support of higher education. In fact, under this method of financing, the federal government would increase its funding of a particular state if that state decided to more fully support higher education. In part, institutional independence is a function of adequate funding, and this proposal, as has already been pointed out, encourages this. Finally, institutional independence in part is a function of programmatic control. Under this proposal, the federal government would not be attempting to substitute its judgments on programs for that of the institutions and states.

Institutional Accountability — The Commission's definition was:

> Institutions of postsecondary education should use financial and other resources efficiently and effectively and employ procedures that enable those who provide the resources to determine whether those resources are being used to achieve desired outcomes.

This method of financing could have an impact on the current system of accountability. Because students and institutions would not receive support directly from the federal government, there would be a lessening of pressures on students and institutions for accountability to the federal government. On the other hand, because students and institutions would receive more of their support directly from states, there would be increased pressures for state-level accountability.

Adequate Financing — The final Commission objective was:

- Adequate financial resources should be provided for the accomplishment of these objectives. This is a responsibility that should be shared by a combination of public and private sources, including federal, state, and local governments, students, and their families and other concerned organizations and individuals.

At least as regards state and federal sources, as has already been pointed out on several occasions, this method of financing does encourage adequate funding. However, to the extent that this proposal encourages lower tuitions, it reduces that source of revenue.

These then are the National Commission objectives and the potential contributions to these objectives of the proposed method of financing. It is clear that the proposal, by itself, does not completely satisfy any one of these objectives; however, the proposal does have the potential to make a meaningful contribution to most of these objectives.

## ANCILLARY DETAILS

These details are not central to the basic proposal that has been presented, but their adoption might make the basic proposal much more attractive.

It may be useful to allow the different terms in the index of effort to be weighted differently. For example, the earlier expression for state effort might be made to include these weights in the following way:

$$\text{State Effort} = \frac{W_1 \text{ X Students}}{W_2 \text{ X Target Population}} \text{ X } \frac{W_3 \text{ X Expenditures} - W_4 \text{ X Tuition}}{W_5 \text{ X Personal Income}}$$

These policy weights would allow the federal government to give different weights to its various objectives. For example, by making $W_4$ greater than $W_3$, the federal government can place more weight on states decreasing tuitions than on states increasing their expenditures. By making $W_3$ greater than $W_1$, the federal government can place more weight on increased dollars efforts than on increased enrollment efforts. As was mentioned earlier, these weights, along with the fact that the proposed index of effort is multiplicative, could result in the federal government having a significant degree of influence on the balance that is struck in each state between its components of efforts.

Second, it may be useful to disaggregate some of the terms in the expression for state effort. In particular, it may be appropriate to disaggregate the personal income term as follows:

$$\begin{aligned}\text{Total Personal Income} = {} & W' \text{ X Total Personal Income of Low Income Families} + \\ & W'' \text{ X Total Personal Income of Middle Income Families} + \\ & W''' \text{ X Total Personal Income of High Income Families}\end{aligned}$$

The advantage of this disaggregation is that it would allow different weights to be placed on the dollars in each income grouping. For example, by making W′ less than W′′ and W′′′, the federal government could explicitly recognize that less of the budget of a low income family is available for supporting higher education — either directly or through the tax system — than is available from middle and high income families.

It may also be useful to disaggregate the students term. For example, a distinction could be made between lower division, upper division and graduate students. This distinction would allow the federal government to reflect its objectives in this area by applying different weights to each of these types of students. Similarly, the target population could be decomposed into several age groups and different weights applied to enrollments from each of these age groups.

Another useful modification to the proposed index of effort might be to explicitly recognize that different states have quite different age profiles. The number of senior citizens in Florida is a classic case. This refinement could be introduced into the expenditures component in the following way:

$$\frac{\dfrac{W_1 \text{ X Expenditures} - W_2 \text{ X Tuition}}{W_3 \text{ X Working Population}}}{W_4 \text{ X } \dfrac{\text{Personal Income of Low Income Families}}{\text{Low Income Working Population}} + \ldots}$$

If the working population were defined as individuals who were 25 to 60 years of age, then a state would not be penalized because it had a high proportion of young or old persons in its population.

Finally, there is the matter of definitions. One of the strong points of this method of financing is that the generic definitions could be adjusted quite easily to reflect current federal policy. For example, students could be defined as postsecondary students instead of higher education students. Expenditures could be defined as including capital, as well as operating, expenditures. Tuition could be expanded to include student charges. The boundaries between low, middle, and high incomes could be changed. By adjustments in these definitions, then, states could be given additional incentives to consider federal policy in the design of their programs.

## CRITICISMS

This section records and responds to several of the more important criticisms which have been raised to date about the proposed method of financing.

The first criticism is that there is no need to spend precious federal dollars providing new and additional incentives to states to support higher education. Some would claim that states are already supporting higher education and that federal dollars could best be spent on other programs. As has already been noted, not everyone is convinced that past patterns of ever increasing levels of state support are guaranteed or even likely. Hence, new and additional state incentives may be a useful addition to the current pattern of state and federal relations. In addition, there are some who would argue that currently there is a much too disparate effort being made as between the highest effort states and the lowest effort states. Hence, it may be appropriate for the federal government to set up a system of additional incentives that might influence some of these lower effort states to increase their efforts. At the same time, it would be unwise and counterproductive to exclude from this program those states that currently are making a high effort. It is clear that these states value higher education and probably are prepared to make wise uses of any federal dollars that are given to them.

A second criticism is that this method of financing does not sufficiently target federal funds. As has already been pointed out, this proposal does not seek to target funds on a national basis. This proposal is based on the premise that targetting can best be done on a state-by-state basis. The best that can be hoped for is that this state level targetting have behind it some strong and explicit federal incentives. It has also been noted that if this proposal were enacted as a basic support program, that it then might become easier for the federal government to develop other programs which were much more targetted than current federal programs. For example, targetted programs for low income students could be developed without a requirement that these programs provide substantial benefits to middle income students.

A third criticism has been that this method of financing does not leave the federal government with enough control over the funds which it commits to this program. This method of financing is based on the premise that the federal government should be result and not control oriented. It should be interested in securing lower tuitions, more enrollments, and greater levels of aggregate state spending. How states accomplish this should be left to the states.

The final criticism has been that federal funds would be better distributed to states on the basis of need rather than effort. The argument is made by some that federal spending should compensate for lack of state spending so that more equal educational opportunities are available to all. If federal funds were unlimited, these criticisms might be valid. The practical fact is that compensatory federal programs are likely to lead to states substituting federal dollars for state dollars. It is unlikely that the federal government could ever afford to take over all, or even very much of, the burden of supporting higher education which is currently shouldered by the states. Many individuals have felt for a long time that limited federal funds can have more of an impact if they are used in an incentive rather than a compensatory fashion.

## FUTURE PLANS

There are still many details of this method of financing that need to be examined. Beyond this there is a need to decide on the scale at which this program could and should be introduced. There is still work to be done on deciding where the funds for this program might best come from (e.g., which programs should it replace) and what modifications in other programs might be possible and desirable if this method of financing were adopted.

In spite of all of the work which still needs to be accomplished, the work to date has convinced the authors that there is considerable merit to this method of financing. It seems unlikely, for a variety of reasons, that federal programs will in the long run stay as committed to direct student aid as they are now. At a minimum, other alternatives should be developed and debated. The proposal made in this paper is offerred in this spirit. As part of a package that includes highly targetted student aid programs, this proposal offers a new direction for federal financing.

APPENDIX A:

EXEMPLARY RESULTS

Depending on the particular formulation of the equation for state effort in this financing proposal, a wide variety of allocation patterns can be produced. The following pages exemplify three investigations of the effect of the financing plan using three distinct sets of "policy" parameters. Statistical data used in these simulations was extracted from a variety of published and computerized federal data sources. References to these sources appear at the end of this appendix.

The first alternative can be represented by the following equation:

$$\text{State Effort} = \left( \frac{\text{State Expenditures Going Directly to Institutions} + \text{State Student Assistance Grants} - \text{State Tuition Revenues}}{\text{State Personal Income}} \right) \times \left( \frac{\text{State Student Population}}{\text{State Population}} \right)$$

This yields the following results when a maximum student award is set at $100.

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TABLE 1

| Rank | State | Index of Effort | Comparative Effort | Per Student Award | Number of Students | Total Award |
|---|---|---|---|---|---|---|
| 1 | Arizona | 1.007 | 1.000 | 100 | 83,572 | 8,357,200 |
| 2 | Washington | .846 | .840 | 83 | 138,871 | 11,662,409 |
| 3 | Idaho | .815 | .809 | 80 | 29,408 | 2,379,507 |
| 4 | Wyoming | .812 | .806 | 80 | 12,763 | 1,028,881 |
| 5 | Utah | .811 | .805 | 80 | 69,308 | 5,579,901 |
| 6 | California | .780 | .775 | 77 | 889,440 | 68,896,532 |
| 7 | Hawaii | .701 | .697 | 69 | 27,662 | 1,926,711 |
| 8 | New Mexico | .605 | .601 | 60 | 39,259 | 2,357,546 |
| 9 | Louisiana | .603 | .599 | 59 | 110,203 | 6,603,526 |
| 10 | North Dakota | .504 | .500 | 50 | 25,564 | 1,278,983 |
| 11 | Wisconsin | .451 | .448 | 44 | 55,650 | 2,493,044 |
| 12 | Alaska | .448 | .445 | 44 | 5,949 | 264,749 |
| 13 | Mississippi | .447 | .444 | 44 | 62,943 | 2,795,554 |
| 14 | Texas | .432 | .429 | 42 | 390,326 | 16,763,118 |
| 15 | Kansas | .427 | .424 | 42 | 94,379 | 4,002,337 |
| 16 | Colorado | .388 | .385 | 38 | 99,763 | 3,843,348 |
| 17 | Oregon | .361 | .358 | 35 | 80,506 | 2,882,735 |
| 18 | Kentucky | .357 | .354 | 35 | 86,674 | 3,072,450 |
| 19 | West Virginia | .351 | .348 | 34 | 159,309 | 5,548,964 |
| 20 | Illinois | .350 | .348 | 34 | 347,742 | 12,096,983 |
| 21 | Montana | .340 | .338 | 33 | 13,444 | 454,223 |
| 22 | Minnesota | .284 | .282 | 28 | 132,293 | 3,733,605 |
| 23 | Arkansas | .272 | .270 | 27 | 47,640 | 1,287,784 |
| 24 | Oklahoma | .271 | .269 | 26 | 101,059 | 2,716,004 |
| 25 | Michigan | .264 | .263 | 26 | 315,721 | 8,291,030 |
| 26 | North Carolina | .224 | .223 | 22 | 130,736 | 2,910,711 |
| 27 | Florida | .211 | .209 | 20 | 186,593 | 3,907,626 |
| 28 | Nebraska | .200 | .198 | 19 | 62,525 | 1,239,590 |
| 29 | South Carolina | .187 | .186 | 18 | 56,316 | 1,044,974 |
| 30 | Georgia | .187 | .185 | 18 | 116,953 | 2,167,639 |
| 31 | Delaware | .157 | .156 | 15 | 16,244 | 254,012 |
| 32 | Alabama | .156 | .155 | 15 | 93,743 | 1,448,635 |
| 33 | New York | .155 | .154 | 15 | 750,332 | 11,536,132 |
| 34 | Maryland | .139 | .138 | 13 | 122,247 | 1,686,253 |
| 35 | Missouri | .123 | .122 | 12 | 147,208 | 1,801,555 |
| 36 | South Dakota | .122 | .121 | 12 | 26,600 | 321,798 |
| 37 | Indiana | .107 | .107 | 10 | 175,350 | 1,870,084 |
| 38 | Iowa | .100 | .099 | 9 | 96,050 | 953,934 |
| 39 | Virginia | .082 | .081 | 8 | 104,372 | 848,432 |
| 40 | Nevada | .031 | .031 | 3 | 1,712 | 5,243 |
| 41 | New Jersey | .020 | .020 | 1 | 165,898 | 327,388 |
| 42 | Maine | .014 | .014 | 1 | 23,144 | 31,567 |
| 43 | Connecticut | .010 | .010 | 1 | 106,748 | 110,382 |
| 44 | Rhode Island | - .097 | .000 | 0 | 35,200 | 0 |
| 45 | Ohio | - .103 | .000 | 0 | 336,803 | 0 |
| 46 | Pennsylvania | - .134 | .000 | 0 | 339,706 | 0 |
| 47 | Tennessee | - .150 | .000 | 0 | 121,282 | 0 |
| 48 | Massachusetts | - .343 | .000 | 0 | 243,150 | 0 |
| 49 | New Hampshire | - .474 | .000 | 0 | 24,893 | 0 |
| 50 | Vermont | - .749 | .000 | 0 | 17,886 | 0 |
| 51 | District of Columbia | -2.338 | .000 | 0 | 53,519 | 0 |

TOTAL AWARDS TO ALL STATES $212,783,079

The reader should note especially the eight states in Table 1 where the subtraction of tuition revenues produces negative indices of state effort.

The second investigation (Table 2) shows the effect of removing state tuition revenue from the previous equation for state effort. Thus, the revised formula for the index of state effort is:

$$\text{State Effort} = \left(\frac{\text{State Expenditures Going Directly to Institutions} + \text{State Student Assistance Grants}}{\text{State Personal Income}}\right) \times \left(\frac{\text{State Student Population}}{\text{State Population}}\right)$$

Again, the information in Table 2 is based on a maximum student award of $100.

TABLE 2

| Rank | State | Index of Effort | Comparative Effort | Per Student Award | Number of Students | Total Award |
|---|---|---|---|---|---|---|
| 1 | Utah | 1.674 | 1.000 | 100 | 69,308 | 6,930,800 |
| 2 | Arizona | 1.422 | .849 | 84 | 83,572 | 7,096,144 |
| 3 | North Dakota | 1.144 | .683 | 68 | 25,564 | 1,746,356 |
| 4 | Wyoming | 1.139 | .680 | 68 | 12,763 | 868,120 |
| 5 | Washington | 1.122 | .670 | 66 | 138,871 | 9,303,199 |
| 6 | Idaho | 1.099 | .656 | 65 | 29,408 | 1,930,028 |
| 7 | California | 1.094 | .653 | 65 | 889,440 | 58,106,826 |
| 8 | Colorado | 1.073 | .641 | 64 | 99,763 | 6,390,308 |
| 9 | New Mexico | .996 | .595 | 59 | 39,259 | 2,334,674 |
| 10 | District of Columbia | .993 | .593 | 59 | 53,519 | 3,175,088 |
| 11 | Hawaii | .909 | .543 | 54 | 27,662 | 1,502,197 |
| 12 | South Dakota | .897 | .536 | 53 | 26,600 | 1,425,608 |
| 13 | Oregon | .847 | .506 | 50 | 80,506 | 4,070,131 |
| 14 | Nebraska | .808 | .483 | 48 | 62,525 | 3,018,201 |
| 15 | Mississippi | .804 | .480 | 48 | 62,943 | 3,023,197 |
| 16 | West Virginia | .794 | .474 | 47 | 159,309 | 7,555,760 |
| 17 | Kansas | .785 | .469 | 46 | 94,379 | 4,423,533 |
| 18 | Louisiana | .780 | .466 | 46 | 110,203 | 5,132,374 |
| 19 | New York | .762 | .455 | 45 | 750,332 | 34,125,925 |
| 20 | Wisconsin | .727 | .434 | 43 | 55,650 | 2,416,895 |
| 21 | Minnesota | .715 | .427 | 42 | 132,293 | 5,648,081 |
| 22 | Iowa | .701 | .418 | 41 | 96,050 | 4,019,490 |
| 23 | Rhode Island | .683 | .408 | 40 | 35,200 | 1,436,341 |
| 24 | Vermont | .671 | .401 | 40 | 17,886 | 716,993 |
| 25 | Michigan | .667 | .398 | 39 | 315,721 | 12,567,790 |
| 26 | Indiana | .656 | .392 | 39 | 175,350 | 6,871,047 |
| 27 | Kentucky | .612 | .365 | 36 | 86,674 | 3,167,387 |
| 28 | Texas | .596 | .356 | 35 | 390,326 | 13,903,547 |
| 29 | Oklahoma | .593 | .354 | 35 | 101,059 | 3,577,140 |
| 30 | Illinois | .547 | .327 | 32 | 347,742 | 11,355,459 |
| 31 | Alaska | .534 | .319 | 31 | 5,949 | 189,698 |
| 32 | Montana | .517 | .309 | 30 | 13,444 | 414,808 |
| 33 | North Carolina | .504 | .301 | 30 | 130,736 | 3,931,547 |
| 34 | Missouri | .488 | .292 | 29 | 147,208 | 4,292,844 |
| 35 | Massachusetts | .484 | .289 | 28 | 243,150 | 7,026,073 |
| 36 | Delaware | .481 | .287 | 28 | 16,244 | 466,244 |
| 37 | Florida | .449 | .268 | 26 | 186,593 | 5,002,063 |
| 38 | Arkansas | .443 | .265 | 26 | 47,640 | 1,261,617 |
| 39 | Georgia | .425 | .254 | 25 | 116,953 | 2,970,855 |
| 40 | Maryland | .419 | .250 | 25 | 122,247 | 3,060,082 |
| 41 | Connecticut | .417 | .249 | 24 | 106,748 | 2,660,747 |
| 42 | Alabama | .395 | .236 | 23 | 93,743 | 2,210,823 |
| 43 | Maine | .386 | .230 | 23 | 23,144 | 533,272 |
| 44 | South Carolina | .377 | .225 | 22 | 56,316 | 1,266,534 |
| 45 | Ohio | .346 | .206 | 20 | 336,803 | 6,950,335 |
| 46 | New Hampshire | .328 | .196 | 19 | 24,893 | 488,338 |
| 47 | Pennsylvania | .306 | .183 | 18 | 339,706 | 6,214,562 |
| 48 | Virginia | .285 | .170 | 17 | 104,372 | 1,778,519 |
| 49 | Tennessee | .230 | .137 | 13 | 121,282 | 1,662,355 |
| 50 | New Jersey | .200 | .119 | 11 | 165,898 | 1,979,585 |
| 51 | Nevada | .044 | .026 | 2 | 1,712 | 4,515 |

TOTAL AWARDS TO ALL STATES $282,204,048.41

In the last investigation, state and local expenditures on higher education are replaced by actual institutional current fund expenditures totaled for public and private schools. Thus, the equation for the third investigation is:

$$\text{State Effort} = \left(\frac{\text{Total Institutional Current Fund Expenditures}}{\text{State Personal Income}}\right) \times \left(\frac{\text{State Student Population}}{\text{State Population}}\right)$$

Results from this formulation are reported in Table 3, again assuming a maximum $100 award per student.

TABLE 3

| Rank | State | Index of Effort | Comparative Effort | Per Student Award | Number of Students | Total Award |
|---|---|---|---|---|---|---|
| 1 | District of Columbia | 12.254 | 1.000 | 100 | 53,519 | 5,351,900 |
| 2 | Utah | 8.586 | .701 | 70 | 69,308 | 4,856,180 |
| 3 | Vermont | 4.191 | .342 | 34 | 17,886 | 611,734 |
| 4 | South Dakota | 3.616 | .295 | 29 | 26,600 | 785,023 |
| 5 | Massachusetts | 3.479 | .284 | 28 | 243,150 | 6,903,961 |
| 6 | North Dakota | 3.420 | .279 | 27 | 25,564 | 713,525 |
| 7 | Colorado | 3.336 | .272 | 27 | 99,763 | 2,715,695 |
| 8 | New Mexico | 3.111 | .254 | 25 | 39,259 | 996,664 |
| 9 | Arizona | 2.805 | .229 | 22 | 83,572 | 1,912,990 |
| 10 | Nebraska | 2.767 | .226 | 22 | 62,525 | 1,411,953 |
| 11 | California | 2.711 | .221 | 22 | 889,440 | 19,680,777 |
| 12 | Wyoming | 2.657 | .217 | 21 | 12,763 | 276,739 |
| 13 | Idaho | 2.562 | .209 | 20 | 29,408 | 614,807 |
| 14 | Kansas | 2.511 | .205 | 20 | 94,379 | 1,933,619 |
| 15 | Rhode Island | 2.498 | .204 | 20 | 35,200 | 717,514 |
| 16 | Oregon | 2.483 | .203 | 20 | 80,506 | 1,631,164 |
| 17 | West Virginia | 2.432 | .198 | 19 | 159,309 | 3,161,505 |
| 18 | New Hampshire | 2.417 | .197 | 19 | 24,893 | 491,009 |
| 19 | Iowa | 2.395 | .195 | 19 | 96,050 | 1,877,350 |
| 20 | New York | 2.380 | .194 | 19 | 750,332 | 14,572,242 |
| 21 | Washington | 2.380 | .194 | 19 | 138,871 | 2,696,855 |
| 22 | Hawaii | 2.243 | .183 | 18 | 27,662 | 506,368 |
| 23 | Indiana | 2.207 | .180 | 18 | 175,350 | 3,158,203 |
| 24 | Oklahoma | 2.199 | .179 | 17 | 101,059 | 1,813,783 |
| 25 | Minnesota | 2.180 | .178 | 17 | 132,293 | 2,353,786 |
| 26 | Mississippi | 2.167 | .177 | 17 | 62,943 | 1,113,247 |
| 27 | Michigan | 1.893 | .154 | 15 | 315,721 | 4,875,947 |
| 28 | Tennessee | 1.875 | .153 | 15 | 121,282 | 1,855,811 |
| 29 | Louisiana | 1.860 | .152 | 15 | 110,203 | 1,672,760 |
| 30 | North Carolina | 1.829 | .149 | 14 | 130,736 | 1,951,602 |
| 31 | Texas | 1.663 | .136 | 13 | 390,326 | 5,297,878 |
| 32 | Illinois | 1.656 | .135 | 13 | 347,742 | 4,699,540 |
| 33 | Missouri | 1.622 | .132 | 13 | 147,208 | 1,948,895 |
| 34 | Wisconsin | 1.611 | .131 | 13 | 55,650 | 731,739 |
| 35 | Connecticut | 1.607 | .131 | 13 | 106,748 | 1,399,863 |
| 36 | Maryland | 1.605 | .131 | 13 | 122,247 | 1,601,519 |
| 37 | Alabama | 1.570 | .128 | 12 | 93,743 | 1,200,990 |
| 38 | Kentucky | 1.482 | .121 | 12 | 86,674 | 1,048,125 |
| 39 | Pennsylvania | 1.454 | .119 | 11 | 339,706 | 4,031,925 |
| 40 | Ohio | 1.443 | .118 | 11 | 336,803 | 3,966,921 |
| 41 | Georgia | 1.331 | .109 | 10 | 116,953 | 1,270,570 |
| 42 | Delaware | 1.304 | .106 | 10 | 16,244 | 172,844 |
| 43 | Maine | 1.257 | .103 | 10 | 23,144 | 237,475 |
| 44 | Alaska | 1.246 | .102 | 10 | 5,949 | 60,490 |
| 45 | Montana | 1.221 | .100 | 9 | 13,444 | 133,991 |
| 46 | South Carolina | 1.207 | .099 | 9 | 56,316 | 554,857 |
| 47 | Arkansas | 1.206 | .098 | 9 | 47,640 | 468,840 |
| 48 | Florida | 1.140 | .093 | 9 | 186,593 | 1,735,339 |
| 49 | Virginia | .980 | .080 | 8 | 104,372 | 834,984 |
| 50 | New Jersey | .622 | .051 | 5 | 165,898 | 841,913 |
| 51 | Nevada | .090 | .007 | 0 | 1,712 | 1,263 |

TOTAL AWARDS TO ALL STATES $125,454,673.39

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## SUMMARY OF DATA SOURCES USED

State Expenditures for Higher Education — TRINST71 File of the NCFPE Data Base (1970-71 HEGIS Information).

State Expenditures for Student Assistance — TRINST71 File of the NCFPE Data Base (1970-71 HEGIS Information).

State Tuition Revenues — TRINST71 File of NCFPE Data Base (1970-71 HEGIS Information).

State Personal Income — Internal Revenue Service, Income Statistics: Individual Returns 1970.

State Student Enrollments — NCES, Fall Enrollment in Higher Education 1970 Supplementary Information, Summary Data.

State Population — U. S. Census, General Population Characteristics, 1970.

Institutional Current Fund Expenditures — U.S.O.E., Financial Statistics of Institutions of Higher Education, 1970-71.

For more detailed information on either the definitions or aggregations of data elements used in the previous investigation, the reader should contact one of the authors directly.